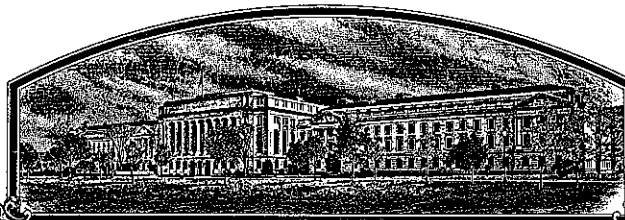


No.

9700265



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Novartis Seeds, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (34 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'S13-J6'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of September in the year of our Lord one thousand nine hundred and ninety-seven.

Attest:

Manda
Commissioner
Plant Variety Protection
Agricultural Marketing

Sam Phillips
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a).

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Novartis Seeds, Inc.		X9613	S13-J6
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)		5. TELEPHONE (include area code)	FOR OFFICIAL USE ONLY PVPO NUMBER 9700265 DATE April 13, 1997 FILING AND EXAMINATION FEE \$2450.00 DATE 1-4-97 CERTIFICATION FEE \$300.00 DATE 26 August 1997
P.O. Box 959 Minneapolis, MN 55440		612-593-7333	
6. FAX (include area code)			
612-593-7801			
7. GENUS AND SPECIES NAME	8. FAMILY NAME (Botanical)		
Glycine max	Leguminosae		
9. CROP KIND NAME (Common name)			
Soybean			
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)			
Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	
Delaware		1976	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			14. TELEPHONE (include area code)
John C. Thorne Novartis Seeds, Inc. P.O. Box 949 Washington, Iowa 52353			319-653-2181
			15. FAX (include area code)
			319-653-4609
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to PVPO)			
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act?)			
<input type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input checked="" type="checkbox"/> NO (If "no," go to item 20)			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?	
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		<input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?			
<input type="checkbox"/> YES (If "yes," give names of countries and dates) <input checked="" type="checkbox"/> NO			
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.			
The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.			
Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT (Owner(s))		SIGNATURE OF APPLICANT (Owner(s))	
			
NAME (Please print or type)		NAME (Please print or type)	
John C. Thorne			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Director, Soybean Breeding	April 14, 1997		

EXHIBIT A

Origin and Breeding History of the Variety

The soybean variety 'S13-J6' is derived from a single F4 plant from the cross 'S 12-22' x 'Century 84'. The cross was made in the winter of 1988 at the Novartis (formerly Northrup King) Research Center at Waimea, Kauai, Hawaii. The F1 generation was grown at the Novartis Research Center at Washington, Iowa, in the summer of 1988; the F2 and F3 at Waimea, in the winter of 1988-89; and the F4 at Washington the summer of 1989. The F1 was bulk harvested. The F2 and F3 were advanced by harvesting 2-4 seeds per plant and planting 600 seed from the resulting bulk. Individual plants of the F4 population were tested for resistance to Phytophthora megasperma, Race 4, by inoculating detached cotyledons with the fungus. Each resistant plant was harvested and threshed individually. The seed from each of these resistant plants were planted in a plant progeny row at Washington in 1990. One of these, numbered W014923, was selected based on early maturity and agronomic characteristics for further testing. This line was subsequently tested under the temporary designation X9613 and named S13-J6. It has been tested at several northern cornbelt locations in the U.S. and in Ontario from 1991 through 1996 and found to yield well compared to other early Group 1 varieties. Descriptive characteristics including purple flowers, tawny pubescence, brown pods, and black hilum (may contain up to 2% other hilum) have been identified and confirmed. S13-J6 has been tested in the field for iron deficiency chlorosis and found to be moderately tolerant. It has been tested for reaction to Races 1, 3, 4, and 7 of Phytophthora sojae using hypocotyl inoculation of greenhouse grown plants and found to carry the Rps1-k gene for resistance.

In the winter of 1993-94, 200 seeds of S13-J6 were planted at Waimea. The increase was rogued for flower and pubescence color and 100 single plants were harvested and threshed individually. The progeny from these plants were planted at Washington in the summer of 1994. This increase was carefully rogued at flowering and maturity. Uniform rows which conformed to the variety description were bulked to produce Pedigree Seed. This seed was planted near Washington, IA in 1995 to produce Breeder Seed. The increase block was rogued carefully during flowering and at maturity and found to be uniform.

Foundation Seed of S13-J6 was produced in 1996 from the 1995 Breeder Seed. The Iowa Crop Improvement Association inspected the fields and found them to meet the standards for Foundation Seed. The variety was approved for Certification by the Soybean Variety Review Board in December of 1996.

S13-J6 is stable and uniform within a purity level of 99% (98% for hilum color). Over four years of testing and three cycles of seed increase, we have observed no variants. Any off-type plants removed from increase fields were assumed to have arisen from admixture or outcrossing. Varietal purity will be maintained using progeny rows as described previously as needed for the life of the variety.

EXHIBIT B**Novelty Statement for the Variety**

S13-J6 is most similar to S 12-22. It can be differentiated from S 12-22 on the basis of resistance to Races 1, 3, 4, and 7 of Phytophthora sojae. S13-J6 is resistant to these races; S 12-22 is susceptible. S13-J6 can be further differentiated from S 12-22 on the basis of flower color and hilum color. S13-J6 has purple flowers and seeds with black hila; S 12-22 has white flowers and seeds with gray hila.

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION
 PLANT VARIETY PROTECTION OFFICE
 BELTSVILLE, MARYLAND 20705

EXHIBIT C
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Novartis Seeds, Inc.	TEMPORARY DESIGNATION	VARIETY NAME S13-J6
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) P.O. Box 959 Minneapolis, MN 55440		FOR OFFICIAL USE ONLY PVPO NUMBER 9700265

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,).

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
 4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

2. SEED COAT COLOR: (Mature Seed)

1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

5. HILUM COLOR: (Mature Seed)

1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other (Specify) _____

May contain up to 2% other hilum.

6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow 2 = Green

7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low 2 = High

8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1^a) 2 = Type B (SP1^b)

9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
 3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
 4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

10. LEAFLET SHAPE:

1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other (Specify) _____

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11. LEAFLET SIZE:

- ☒ 2 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17')
3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

- ☒ 2 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton')
3 = Dark Green ('Gnome'; 'Tracy')

13. FLOWER COLOR:

- ☒ 2 1 = White 2 = Purple 3 = White with purple throat

14. POD COLOR:

- ☒ 2 1 = Tan 2 = Brown 3 = Black

15. PLANT PUBESCENCE COLOR:

- ☒ 2 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

- ☒ 2 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')
3 = Bushy ('Gnome'; 'Govan')

17. PLANT HABIT:

- ☒ 3 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

18. MATURITY GROUP:

- ☒ 4 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V
9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

☐ Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

☒ 1 Bacterial Blight (*Pseudomonas glycinea*)

☐ Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

☒ 1 Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

☐ Race 1 ☐ Race 2 ☐ Race 3 ☐ Race 4 ☐ Race 5 ☐ Other (Specify)

☐ Target Spot (*Corynespora cassicola*)

☐ Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

☐ Powdery Mildew (*Microsphaera diffusa*)

☒ 1 Brown Stem Rot (*Cephalosporium gregatum*)

☐ Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

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19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

☐ Pod and Stem Blight (*Diaporthe phaseolorum* var; *sojae*)
☐ Purple Seed Stain (*Cercospora kikuchii*)
☐ Rhizoctonia Root Rot (*Rhizoctonia solani*)
 Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
 Race 1 Race 2 Race 3 Race 4 Race 5 Race 6 Race 7
 Race 8 Race 9 ☐ Other (Specify) _____

VIRAL DISEASES:

☐ Bud Blight (Tobacco Ringspot Virus)
☐ Yellow Mosaic (Bean Yellow Mosaic Virus)
☐ Cowpea Mosaic (Cowpea Chlorotic Virus)
☐ Pod Mottle (Bean Pod Mottle Virus)
☐ Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode (*Heterodera glycines*)
☐ Race 1 ☐ Race 2 Race 3 ☐ Race 4 ☐ Other (Specify) _____
☐ Lance Nematode (*Hoplolaimus Colombus*)
☐ Southern Root Knot Nematode (*Meloidogyne incognita*)
☐ Northern Root Knot Nematode (*Meloidogyne Hapla*)
☐ Peanut Root Knot Nematode (*Meloidogyne arenaria*)
☐ Reniform Nematode (*Rotylenchulus reniformis*)
☐ OTHER DISEASE NOT ON FORM (Specify): _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

Iron Chlorosis on Calcareous Soil Moderately Resistant.
☐ Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☐ Mexican Bean Beetle (*Epilachna varivestis*)
☐ Potato Leaf Hopper (*Empoasca fabae*)
☐ Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	A1900	Seed Coat Luster	S12-22
Leaf Shape	S12-49	Seed Size	S09-95
Leaf Color	S12-22	Seed Shape	S12-22
Leaf Size	9111	Seedling Pigmentation	S24-92

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

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VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Submitted	122	2.6	76	6.7	9.8	43.9	20.5	14.5	
S12-22 Name of Similar Variety	121	4.7	78	6.3	10.5	41.2	22.1	17.4	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTi-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) Novartis Seeds, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME S13-J6
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) P.O. Box 959 Minneapolis, MN 55440	5. TELEPHONE (include area code) 612-593-7333	6. FAX (include area code) 612-593-7801
7. PVPO NUMBER 9700265		

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain.

☒ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company?

If no, give name of country _____

☒ YES ☐ NO

10. Is the applicant the original breeder? If no, please answer the following:

☒ YES ☐ NO

a. If original rights to variety were owned by individual(s):

Is (are) the original breeder(s) a U.S. national(s)? If no, give name of country _____

☐ YES ☐ NO

b. If original rights to variety were owned by a company:

Is the original breeder(s) U.S. based company? If no, give name of country _____

11. Additional explanation on ownership (If needed, use reverse for extra space):

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original breeder, both the original breeder and the applicant must meet one of the above criteria.

The original breeder may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

Public reporting burden for this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter.

Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call (202) 720-7327 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.